

PROJECT NAME
CITY, STATE

SECTION 270000 - COMMUNICATIONS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes products and execution requirements pertaining to Division 27 systems. Copper and fiber backbone and horizontal cabling along with support systems are covered under this document.
- B. Product specifications, general design considerations, and installation guidelines are provided in this document. Quantities for all cabling products shall be provided as required to complete cabling to all work stations as shown on floor plans.
- C. The same manufacturer's product shall be utilized throughout the entire project for all copper and fiber optic cabling.
- D. Substitutions: No substituted products shall be installed except with written approval by Owner.

1.2 DATA AND VOICE COMMUNICATIONS CONTRACT WORK

- A. General:
 - 1. Furnish all labor, materials, tools, equipment and services for the installation in accordance with general provisions of specifications and the Contract Drawings.
 - 2. Report percentage of work completed on a monthly basis.
 - 3. Completely coordinate with work of all other trades.
 - 4. Provide all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation, whether or not specifically indicated in the Contract Documents.
 - 5. Provide all floor penetrations, floor sleeves, conduit raceways, wall penetrations, etc. not shown on the electrical plans but needed for the routing of cabling provided herein.
 - 6. Provide labor for work area patch cord installation at designated workstations.
 - 7. Provide labor for equipment patch cord installation at patch panel to Ethernet switch port.
 - 8. Provide labor for voice patch cord installation at horizontal patch panel to voice cross-connect patch panel in TR and TC.
 - 9. Provide labor for testing horizontal and backbone cabling.
 - 10. Provide firestopping.
 - 11. Provide labor for Wireless LAN Access Point, Antennas and Power Injector installation and system testing.
 - 12. Provide Telecommunications grounding and bonding.
- B. Provide complete installation for Structured Telecommunications Cabling System including but not limited to:
 - 1. Category 5e UTP horizontal cables.
 - 2. Category 3 multipair backbone cables.
 - 3. Multimode optical fiber backbone cables.
 - 4. Work area telecommunication outlets.
 - 5. Wall mounted voice outlets.
 - 6. Equipment mounting racks and rack enclosures.
 - 7. Category 5e modular patch panels.
 - 8. Optical fiber patch panels.
 - 9. Optical fiber {SC} connectors.
 - 10. Data and Voice Category 5e patch cords
 - 11. Optical fiber patch cords.

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12. Wire management panels.
13. Sound, Paging, Telephone interface cabling.
14. Field testing.
15. Patch cord installation.
16. Conduit floor sleeves, conduit and supports required for installation of all cabling.
17. Wireless LAN installation.
18. Firestopping.

C. Purchasing

1. Purchase all materials from **{Distributor}**
2. Provide complete price breakdown of materials and handling fees.

1.3 SUBMITTALS

- A. Submittals shall be complete and at one time. Partial submittals will not be considered.
- B. Material lists, schedule of values, lists of subcontractors, and proof of Contractor qualifications shall be provided to Engineer upon request and shall follow the guidelines as stated in the General Requirements (Division 1 of the specification).
- C. Performance bonds, payment bonds, and insurance certifications shall be submitted by the Contractor prior to execution of the contract.
- D. Show drawings shall be submitted. All communication system shop drawings shall include:
 1. Manufacturer's data (specifications, "cut sheets").
 2. Wiring diagrams for all installed cabling.
 3. Equipment rack/cabinet layouts.
 4. Proposed labeling schemes and labeling method.
 5. List of cabling distances (typical and maximum) for all structured cabling
 6. Submit copies of certifications for all technicians and the project manager who will support this project.
 7. The certifications shall include:
 - a. Structured Cabling and termination equipment installation certifications for copper and optical fiber connectivity and cabling.
 - b. Approved manufacturer classes satisfactorily completed.
 8. Contractor shall submit a test plan that defines the tests required to ensure that the system meets technical, operational, and performance specifications 45 days prior to proposed test date.
 9. Work shall not proceed without the Owner's approval of the submitted items.
- E. Drawings & Inspection of Site:
 1. Communications floor plan drawings are to scale and typically are not dimensioned. The Contractor shall not scale drawings for equipment placement and clearances. Dimensions given on drawings shall always take precedence over scaled drawings.
 2. Any existing wires, utilities, or equipment shown on the drawings are shown for general information and to the best knowledge of the Engineer. The Contractor shall field verify all existing wires, utilities, or equipment.
 3. The Contractor shall field verify distances and equipment placements coordinating locations with other trades, construction managers, and general Contractor prior to installation.
 4. The Contractor shall review all site conditions prior to submitting a bid on this project. Any obvious discrepancies between the site conditions and bidding documents shall be brought to the attention of the Engineer at the time of bidding so clarification can be made by addendum.